15. (NEW) The method of claim 14 wherein said resilient mounting of said measuring surface comprises resiliently journaling said measuring surface in a direction substantially parallel to said refining surface whereby said measuring surface is movable in said direction in response to a stress force with respect to a permanent force sensor connected to said measuring surface.

16. (NEW) The method of claim 14 including calculating the size and distribution of the output transferred to material passing through said refining gap based on said stress force measured by said measuring surface, and employing said calculation to control the refining process.

17. (NEW) Apparatus for measuring stress forces in a refining disk having a refining surface including a plurality of refiner bars utilized in connection with a pair of refining disks defining a refining gap therebetween, comprising at least one measuring member disposed on said refiner surface and including a measuring surface including at least a portion of a plurality of said refiner bars, and resilient mounting means for resiliently mounting said at least one measuring member on said refiner surface.

18. (NEW) The apparatus of claim 17 wherein said at least one measuring member comprises a plurality of measuring members.

19. (NEW) The apparatus of claim 17 wherein said at least one measuring member comprises a force sensor and a measuring body connecting said force sensor to said measuring surface.

20. (NEW) The apparatus of claim 19 wherein said force sensor is in abutment with said measuring body, and including attachment means for fixing said force sensor with respect to said measuring body.

21. (NEW) The apparatus of claim 20 wherein said resilient mounting means comprises mounting means for resiliently journaling said measuring surface in a direction substantially parallel to said refiner surface.

22. (NEW) The apparatus of claim 21 wherein said measuring surface is connected to said measuring body, and said measuring body extends from said measuring surface on the side of said force sensor so as to provide a measuring body extension, said measuring body extension including a joint portion where said measuring body is movable in a direction substantially parallel to said refiner surface.

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23. (NEW) The apparatus of claim 22 wherein said measuring body has a substantially circular cross-section, and wherein said joint portion comprises a flattened portion of said measuring body disposed below said force sensor.

24. (NEW) The apparatus of claim 19 wherein said force sensor comprises a piezoelectric sensor.

25. (NEW) The apparatus of claim 17 wherein said resilient mounting means comprises a sealing member surrounding said measuring surface for joining said measuring surface to said refiner surface.

26. (NEW) The apparatus of claim 25 wherein said sealing member comprises a yieldable material.

27. (NEW) The apparatus of claim 26 including a casing surrounding said force sensor and said measuring body, said attachment means attaching said force sensor to said casing, said measuring body including a first end and a second end, said first end of said measuring body attached to said casing and said second end of said measuring body attached to said measuring surface, said measuring surface and said sealing member closing said casing.

28. (NEW) The apparatus of claim 27 including a sleeve enclosing said sealing means, whereby said sleeve, said sealing means and said measuring surface are inserted in said casing when said casing is sealed.

REMARKS

The above-noted cancellation of claims 1-13, and addition of new claims 14-28, as well as the submission of a new Abstract and revisions to the Specification, are respectfully